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7/30/2012

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Subject: **EPA's Comments on the Draft Areawide Environmental Impact Statement (DAEIS) for the Central Florida Phosphate District, located in Charlotte, DeSoto, Hardee, Lee, Manatee, Polk, and Sarasota Counties, Florida EIS Filed Date: 05/22/2012; CEQ Federal Register Date: 06/01/2012 CEQ Number: 20120165; ERP Number: COE-E67007-FL**

Dear Mr. Kinard:

Pursuant to Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the Draft Areawide Environmental Impact Statement (DAEIS) on Phosphate Mining in the Central Florida Phosphate District (CFPD) developed by the U.S. Army Corps of Engineers (USACE), Jacksonville District, using a third-party contracting process as described in 40 CFR 1506.5. EPA understands that this NEPA process was "triggered" (initiated) because the USACE has received four applications for Department of the Army permits under Section 404 of the Clean Water Act (CWA) from Mosaic Fertilizer, LLC and CF Industries, Inc. (the Applicants) for four proposed phosphate mining projects in the CFPD (referred to locally as the "Bone Valley"). The specific projects currently being reviewed by the USACE (including their Department of the Army permit application numbers) are: Mosaic's Desoto Mine (SAJ-2011-01968), Mosaic's Ona Mine (SAJ-2010-03680), Mosaic's Wingate East extension of the Wingate Creek Mine (SAJ-2009-03221), and CF Industries' South Pasture Mine Extension (SAJ-1993-01395). EPA notes that the DAEIS appropriately focuses not only on the affected environment within the boundaries of the CFPD, an area of approximately 1.32 million acres (+/-2,100 square miles) in Hardee, Hillsborough, Manatee, Polk, Sarasota and Desoto counties, but also analyzes affected areas outside the CFPD, including the Peace, Myakka, Manatee, and Little Manatee River watersheds which are downstream of the CFPD, as well as affected portions of counties outside of the CFPD, including areas in Charlotte and Lee Counties.

EPA notes that the USACE has determined that "when viewed collectively, the separate proposed phosphate mining related projects have similarities that provide a basis for evaluating their environmental consequences together in one comprehensive environmental impact statement." As part of the permit review process, the USACE is evaluating the environmental effects of these similar actions. The primary Federal involvement associated with the proposed actions is the discharge of dredged or fill material into "Waters of the United States," including

jurisdictional wetlands. Issuance of federal authorizations for the proposed activities would constitute a "major federal action."

EPA previously received your letter (dated September 14, 2010) offering our agency, as well as the Florida Department of Environmental Protection (FDEP), an opportunity to become a "Cooperating Agency" to the USACE in the development of this AEIS for phosphate mining in the CFPD. Your request letter stated that this AEIS was intended to satisfy the requirements of the National Environmental Policy Act (NEPA) (Title 40 of the Code of Federal Regulations, part 1501.6), NEPA (42 U.S.C. 432 1 et seq.), Council for Environmental Quality (CEQ) Regulations (40 C.F.R. Parts 1500-1508), and the NEPA Implementation Procedures for the Regulatory Program (Appendix B to 33 C.F.R. Part 325). You also noted that the AEIS was proposed to fully consider a range of environmental, and socio-economic issues, with the USACE's responsibilities as the lead Federal agency for this AEIS defined in 40 CFR 1501.5, and EPA's responsibilities as Cooperating Agency outlined in 40 CFR 1501.6. EPA understands that this AEIS serves dual purposes, both as a Regulatory EIS for the four specific mine applications, as well as a holistic areawide mining environmental impact study. EPA accepted the USACE offer to serve as a Cooperating Agency in our letter sent to you on October 14, 2010, and we note that FDEP accepted on January 25, 2011. EPA also notes that over 20 municipal and county governments in the region have since agreed to become Participating Agencies to the USACE on the AEIS.

EPA supports the development of an AEIS for the CFPD, with a goal of bringing together local, state, federal, and industry partners involved in phosphate mining in the Bone Valley and developing a comprehensive EIS that fully analyzes the secondary and cumulative impacts of phosphate mining. EPA therefore concurred with the USACE retaining an EIS contractor (utilizing the 3rd Party NEPA process) to develop this AEIS, and we appreciate the USACE making development of this important AEIS a high priority. We worked with USACE on an aggressive schedule that yielded a comprehensive DAEIS in less than 18 months from the date of the publication of the Notice of Intent (NOI) in the Federal Register on February 18, 2011. The DAEIS appropriately evaluates the existing environmental conditions and potential future multi-media impacts associated with phosphate mining, and we have therefore involved a number of programs within our region and at EPA Headquarters to assist in this on-going process.

EPA offers the following specific comments and recommendations on relevant sections of the DAEIS:

1. **DAEIS Cooperating and Participating Agencies**

EPA notes that one of the primary goals of NEPA is to encourage meaningful public input and multi-agency involvement in the process of evaluating the environmental impacts of proposed federal actions, in this case the consideration of issuance of Department of the Army permits under Section 404 of the Clean Water Act (CWA). To this end, the President's Council on Environmental Quality (CEQ), which oversees NEPA nationally, has developed regulations that require agencies to make diligent efforts to involve the public and local, state, and other federal agencies in the NEPA process. The CEQ regulations call for agencies to actively identify

parties that might be interested in a proposed federal action, and to give notice to the public through a variety of media such as the Federal Register, local newspapers, or direct mailing.

EPA Recommendation: The USACE has actively identified parties that might be interested in a proposed federal action, and we commend the USACE for utilizing both Cooperating and Participating Agencies in the development of this AEIS. EPA recommends that the USACE continue working closely with both the Cooperating and Participating Agencies in completing the NEPA process.

2. DAEIS Purpose and Need

Pursuant to Title 33, Code of Federal Regulations (CFR), Part 325, Appendix B, the USACE appropriately considered the Applicants' statements of purpose and need for additional phosphate mining, but also considered the purpose and need from the public's perspective. The Applicants generally stated (for each of the proposed mines) that their purpose is "to maximize extraction of phosphate ore from the known mineral reserves located within a practicable pumping distance" from the various ore separation and beneficiation plants and "to maintain production capabilities of existing beneficiation facilities at optimum production levels." The Applicants also indicated their desire to "economically extend the life of mining facilities and beneficiation plants for as long as practicable by mining all commercially available phosphate reserves."

In order to guide its evaluation of the proposed project, both for purposes of NEPA and the AEIS, and the USACE's evaluation of the associated applications for permits under Section 404 of the CWA pursuant to the Section 404(b) (1) guidelines (40 CFR 230) and the public interest review, the USACE appropriately considered the purpose and need "in terms of a basic project purpose and an overall project purpose." The overall project purpose, as defined by the USACE, forms the basis for the USACE's evaluation of reasonable alternatives under NEPA. EPA notes the USACE's basic project purpose for each of the four similar actions under review in this AEIS is "to extract phosphate ore, and the overall project purpose is to extract phosphate ore from the mineral reserves located in the CFPD and to construct the associated infrastructure required to extract and process the phosphate ore at separation/beneficiation facilities recognizing that the ore extracted must be within a practicable distance to a new or existing beneficiation plant."

EPA concurs with the USACE's objectives of the AEIS to analyze the direct, indirect, and cumulative impacts/effects associated with the four similar permit applications for mining of phosphate within the CFPD, including those indirect and cumulative impacts that extend to areas outside of the CFPD. EPA also concurs with the USACE's goal to describe and assess the "no-action" alternative and other reasonable alternatives to the four similar proposed mining projects for which CWA permits are sought. Finally, EPA concurs with the USACE's "over-arching goal" of this AEIS "to inform agencies, other stakeholders, and the public of the impacts and alternatives to the four similar permit applications for phosphate mines."

EPA Recommendation: The Final AEIS (FAEIS) should be sufficiently thorough and detailed enough to fully support the USACE regulatory decisions regarding the four specific proposed

mine projects, as well having an additional capacity to inform USACE regulatory decisions regarding future phosphate mining permit applications.

3. DAEIS Process

EPA notes that, in accordance with Title 40, Code of Federal Regulations (40 CFR), Part 1501.7, the USACE complied with the requirement for an early and open NEPA process for determining the scope of issues to be addressed and for identifying significant issues related to the proposed action. As mentioned previously, the Notice of Intent (NOI) for the AEIS was published in the Federal Register on February 18, 2011. The formal scoping period ran from February 18, 2011 through April 30, 2011, and two public scoping meetings were held with a combined total of over 1000 persons in attendance: one on March 23, 2011, at The Lakeland Center in Lakeland, Florida, and one on March 25, 2011, at the Charlotte Harbor Event Center in Punta Gorda, Florida. The Cooperating Agencies, EPA and FDEP, both provided staff that spoke at these meetings along with USACE and 3rd Party Contractor speakers. The USACE received more than 5,000 comments contained in approximately 3,000 submissions from agencies, other stakeholder groups, and individual members of the public during the scoping period. EPA reviewed many of these comments, and noted that they covered a wide range of topics.

EPA notes that the USACE has received comments on the DAEIS that cover many of the same topics addressed during scoping. Among the most frequently mentioned are issues pertaining to the potential loss of wetlands and required mitigation, effects of phosphate mining on groundwater quality and levels (particularly the effects on the Floridan aquifer), adverse impacts to the Peace and Myakka Rivers and their tributaries, and maintaining and improving surface water quality in the Charlotte Harbor estuary. Also, many comments have been received concerning jobs and the regional economic importance of phosphate mining.

EPA Recommendation: The DAEIS notes that the USACE plans to respond to written comments received from the public during finalization of the FAEIS, which currently is projected to occur during the fall of 2012. EPA concurs, and we recommend that the FAEIS include a detailed "responsiveness summary" that presents and addresses all of the public and agency comments that have been submitted.

4. DAEIS Alternatives Analysis

EPA notes that USACE's "NEPA implementing regulations" appropriately require consideration of a range of reasonable alternatives, including a "no action" alternative and the Applicants' preferred alternatives. EPA notes that the process for identifying alternatives to be considered under this DAEIS, in addition to the "no action" and the Applicants' proposed alternatives, applied two assumptions:

- The alternatives must be located over the CFPD geological formations where economically-mineable reserves of phosphate are likely to be located.

- The alternatives must either be located within 10 miles of an existing beneficiation plant that would be able to process the materials excavated at the alternative mine, or a new beneficiation plant would be required as an element of the alternative.

EPA notes that the DAEIS appropriately featured a screening of alternatives that included the using of publicly-available geographic information system (GIS) databases and geospatial analytical methods. EPA also concurs with the methodology used:

- The DAEIS included a preliminary screening of lands within the CFPD that included the identification of features that would preclude some lands from being considered as candidate areas for future mining (such as already mined lands, lands developed as urban areas, publicly owned lands designated for inclusion in parks or other preserved areas, etc).
- The DAEIS defined, using reasonable assumptions, a minimum parcel size and minimum overall mining areas that would be reasonable for "stand alone" mines.
- The DAEIS included a review of county and local ordinances that might preclude mine siting or mining operations.
- The DAEIS defined, using reasonable assumptions, the environmental characteristics which would likely increase the difficulty of mining implementation (primarily because of elevated risks of environmental impact).
- The DAEIS included a complete screening of candidate alternative locations by comparing environmental conditions, with the selection of a reasonable subset of the candidate alternatives for more detailed analysis.

EPA notes that the DAEIS appropriately considered a "no action" alternative that assumed no new mining projects would be approved during the 50-year planning horizon analyzed (through 2060). As required under NEPA, the DAEIS also considered the Applicants' Preferred Alternatives (Alternatives 2 through 5) as described in the respective permit applications, as well as all foreseeable mines (Alternatives 6 through 8).
Finally, the DAEIS included an additional 17 areas that were identified and defined as "offsite alternatives" warranting more detailed analysis following the preliminary and secondary screening of candidate mining locations in the CFPD (Alternatives 9 to 25).

EPA Recommendation: In the Overall Project Purpose discussion, the FAEIS should include additional justification on the "practicable distance," which the DAEIS defines as the distance between the ore extraction area and a new or existing beneficiation plant. EPA notes that by allowing only a slightly greater distance than the 10-mile distance used for mine site planning in the DAEIS (such as a 12-mile distance), additional flexibility would be possible in mine plan configurations, including the potential for fewer beneficiation facilities required.

5. **DAEIS Use of GIS for Ecological Analysis**

As required by NEPA, the DAEIS analyzed ecologic resources that were considered "most likely to be affected" by the proposed mines or their alternatives. These resources included "herbaceous and forested wetlands, intermittent and perennial streams, and associated aquatic resource habitats." Analysis of potential direct mining impacts to these resources

appropriately utilized the latest geographic information system (GIS)-based tools developed by the State of Florida that provided a means for estimating the relative quality of wildlife habitats. These were the Integrated Wildlife Habitat Ranking System "IWHRS," developed by the Florida Fish and Wildlife Conservation Commission (FFWCC), and the Critical Lands and Waters Identification Project "CLIP" system, developed through a collaborative effort between the Florida Natural Areas Inventory (FNAI), the University of Florida, and the FFWCC. These GIS systems allow for rapid assessment of the ecological quality of a given parcel of land within the State of Florida, and this ecological screening of potential for impacts on natural resources was conducted for all of the 24 alternatives (not used for the "no action"). EPA notes that the IWHRS ranks wildlife habitat value on a scale from 0 to 10, while the CLIP looks at terrestrial and waters issues. The IWHRS uses a wide variety of landcover and wildlife data, while CLIP follows a combined approach of layering and assessing items. EPA also notes that the land use coverage used to support this AEIS was the 2009 SWFWMD "Florida Land Use, Cover, and Forms Classification System."

EPA Recommendation: EPA concurs with the use of the IWHRS and CLIP tools, but recognizes that they are composed of different data layers and use different datasets, and therefore could produce a substantially different outcomes for a given site. EPA recommends that the FAEIS include additional information on the relative merits/differences of both systems, such as how the Aggregated CLIP reflects a greater variety of ecological resources than the IWHRS, and how the Aggregated CLIP scores give more weight to the presence of surface waters, floodplains, and wetlands than does the IWHRS. EPA concurs with using both tools to provide "additional perspective for the AEIS review in its evaluation of the alternatives."

6. DAEIS Analysis of Wetlands and Mitigation

EPA notes that, in accordance with NEPA, the DAEIS appropriately evaluated direct and secondary impacts on wetlands systems and considered employment of buffers, setbacks, and greenways at perennial and intermittent streams. The DAEIS appropriately included a number of detailed summary tables of a range of ecological impacts that were identified for each alternative during the study. These include:

- Table ES-2, "Summary of Wetland and Stream Impacts of the Applicants' Proposed Alternatives"
- Table ES-3, "Wetland Land Uses at Alternatives 6, 7, and 8"
- Table ES-4, "Wetland Land Uses For Other Offsite Alternatives"
- Table ES-5, "Effects of Conceptual Buffers of 1,500, 3,000, and 6,000 Feet around Priority 1 and 2 Areas"
- Table ES-6, "Effects of Conceptual Buffers of 1,500, 3,000, and 6,000 Feet from Perennial Streams"
- Table ES-7, " Effects of Conceptual Buffers of 1,500, 3,000, and 6,000 Feet from Perennial and Intermittent Streams"
- Table ES-8, "Effects of Setback to Avoid Peace River "Greenway" System"
- Table ES-9, "Effects of Conceptual Buffers of 1,500, 3,000, and 6,000 Feet around High Value Wetlands Identified in the Applications"

- Table ES-10, "Effects of Conceptual Buffers from All Perennial Streams Identified in the Applications"
- Table ES-11, "Effects of Conceptual Buffers from All Perennial and Intermittent Streams Identified in the Applications"

Because of their cumulatively high degree of ecological function performed, including endangered and sensitive species habitat, groundwater recharge, water quantity provided to agricultural and municipal users, and water quality benefits to the downstream waters (including the Charlotte Harbor estuary), EPA considers many of the wetlands located in the proposed mining sites to be Aquatic Resources of National Importance (ARNI). Accordingly, this status as ARNI is indicated in the comment letter by EPA on the four USACE Public Notices that are the subject of this DAEIS that will be issued separately (by the Region 4 Wetlands, Coastal, & Oceans Branch) from this DAEIS comment letter.

EPA Recommendations: EPA concurs with the content in Chapter 5 of the AEIS that points out that wetland enhancement, restoration, establishment (creation), and/or preservation projects could serve, in appropriate combination of activities, to offset unavoidable wetland impacts for the proposed phosphate mining, when such mitigation projects are conducted in accordance with the USACE and EPA policies and procedures described in the joint 2008 Mitigation Rule. EPA notes that the DAEIS analyzed wetland mitigation and compensatory mitigation in a broad procedural sense, but we recommend additional, site-specific analyses be performed for the FAEIS as noted below. The ecological benefits of a mitigation project should compensate for the functional loss resulting from the permitted wetland impact. Compensatory mitigation activities may include, but are not limited to, onsite mitigation, offsite mitigation, offsite regional mitigation, and the purchase of mitigation credits from permitted mitigation banks. Specific comments are as follows.

- As mentioned previously in our comment on the Alternatives Analysis, the threshold of practicability is given in the DAEIS as 10-miles, and EPA recommends that use of this distance (versus use of a longer distance) be better justified in the FAEIS.

- For the proposed Mosaic Ona mine, the mine plan or configuration as proposed appears separated from the additional and contiguous Mosaic property to the south, also anticipated as a phosphate mine in the future and analyzed in the AEIS. EPA recommends that the Ona Mine site and the large Mosaic property to the south be planned concurrently, considering that a larger contiguous planning area would allow more options and opportunities for avoidance of wetland and other environmental impacts and compensatory mitigation.

- The DAEIS mentions a proposed permit duration of 45 years for the Ona mine, as well as similarly long times for the other mines. EPA notes that such a long duration can involve substantial risk for increases in environmental impacts over time as technical, biological, climatic, economic, and legal conditions will probably change over such a long period. In recognition of this high risk and uncertainty associated with a long permit duration, EPA recommends that a shorter permit duration be considered, with the entire proposed mine area potentially covered as sequential individual permits instead of a single long

permit. EPA also recommends permit conditions that require periodic interagency reviews of mining and mitigation activities at least every 5 years, as well as annual or semi-annual substantive reporting of mining and mitigation activities, with a corrective action plan or adaptive management plan included in the same reports when warranted.

- The project and mine configurations to be included in the FAEIS should demonstrate a greater degree of wetland impact avoidance and minimization, and should be substantively reviewed and discussed further in close consultation with EPA and the Applicants.

- Compensatory mitigation options, likely as mitigation banks, consistent with the USACE and EPA joint 2008 Mitigation Rule, should be reviewed and discussed further in the FAEIS. Conceptual off-site wetland restoration opportunities already have been identified in the Peace River watershed and discussed with EPA several times since mid 2011. Typical wetland mitigation opportunities for a substantial gain in wetland function could involve rehydration of drained wetlands on current agricultural lands, removal or alteration of levees or dikes to restore floodplain functions, blockage of drainage ditches, removal of historic fill material, and other field methods.

- The FAEIS should include better justification for the adopting the Florida UMAM wetland functional assessment method instead of the older and largely obsolete WRAP method. The reduced mitigation value of preserved, but not necessarily restored or enhanced, wetlands also should be determined early in the review and discussion process. In addition, the temporal loss of wetland functions should be incorporated into the overall compensatory mitigation planning, likely resulting in a mitigation project with more than a one-to-one final ratio to compensate for the temporal loss and uncertainty associated with successful wetland and stream restoration following surface mining operations. The FAEIS should discuss a new mitigation bank (or banks) that could be established even if the permit applicant(s) is/are the only bank customer. Under the Federal mitigation banking process, an independent organization should manage the mitigation bank(s) as a first priority, and a separate bank could serve the Myakka River and Peace River as distinct watersheds, in recognition that watersheds at that scale(e.g., 8-digit HUC codes or hydrologic units) are the broadest scale under the 2008 Mitigation Rule.

7. DAEIS Analysis of River Flows and Runoff

The DAEIS appropriately looked at impacts on critical portions of the seven major rivers that drain lands within the CFPD: Withlacoochee River, Hillsborough River, Alafia River, Little Manatee River, Manatee River, Myakka River, and the Peace River. The DAEIS notes that of the four currently proposed new mines, three are primarily located within the Peace River watershed and one is located in the uppermost portion of the Myakka River watershed, and many of the other alternatives are also in these two watersheds. The DAEIS identified future rainfall as the critical "driver" most impacting the water balance of any study area in Florida, as "it directly affects both the surface and groundwater resources of the AEIS study area."

EPA notes that Applicants generally propose to develop mine footprints inside a ditch and berm system containing the mine's recirculation system. Thus, the mining area is to be designed to be "taken out of a given watershed's surface water contributions to the watershed's water budget except as allowed through discharges from the permitted National Pollutant Discharge Elimination System (NPDES) outfalls." As portions of the mine are reclaimed and ultimately released from within the recirculation system, the total mine capture area is proposed "to be returned to the pre-mining condition, and its impact on the watershed's water budget reduced over this time period." EPA recommends that the applicants coordinate permitting of these outfalls with EPA Region 4's Water Protection Division, Municipal and Industrial NPDES Section.

The DAEIS appropriately featured a detailed hydrologic analysis of potential decreases in surface water flows to downstream reaches of Horse Creek, the subwatershed in the Peace River that would be the most affected by development of the currently proposed Desoto, Ona, and South Pasture Extension Mines, and also the Pioneer foreseeable future mine project. Rainfall "capture" areas were estimated by evaluating the mine plans in terms of acreages scheduled to be mined over the life of each mine, and changes in land use and soil types were projected and used to calculate land use-based runoff coefficients which supported calculation of runoff quantities under annual average rainfall conditions at 10-year increments through 2060. The DAEIS quantified the differences between subwatershed runoff projections with and without the individual mines in place over the duration of the planning horizon. The DAEIS also notes that "because each mine's area is large, when viewed from a local standpoint, the expectation might be that the difference in runoff might be large, but when viewed from a watershed perspective, these areas are modest. The calculated differences in runoff delivered through the Horse Creek watershed were small."

The evaluations of the potential effects of two of the foreseeable future mine projects (the Pine Level/Keys and the Pioneer prospective mine projects) were also conducted using conceptual mine plans for these two alternatives that were generated based upon information and assumptions drawn from review of the mine plans for the Desoto, Ona, Wingate East, and South Pasture Extension permit applications.

EPA Recommendation: The FAEIS should include any additional hydrologic analyses that document potential decreases in surface water flows to downstream reaches of waterbodies that could be affected by development of the currently proposed mines or the foreseeable future mines.

8. DAEIS Analysis of Potential Impacts to the Floridan Aquifer

The DAEIS appropriately assessed the potential of the proposed mining to affect the water quality of surface waters draining off of, or downstream from, mined or reclaimed lands. The DAEIS also found that CFPD groundwater resources include three aquifers, two of which are most at risk of being influenced by phosphate mining: the Surficial Aquifer System and Floridan Aquifer System. The DAEIS found that in the southern areas of the CFPD, where the intermediate aquifer system is well developed, "the potential for water quality effects to penetrate to the Floridan is low." EPA is concerned, though, that this is not the case in the

northern portions of the CFPD, where a well defined intermediate confining unit/intermediate aquifer system is not present. The DAEIS found that "surficial aquifer communication with the upper Floridan aquifer can occur" in the northern portions of the CFPD.

Groundwater modeling using a model derived from SWFWMD's District Wide Regulatory Model (DWRM) was conducted to project the relative influence of the two proposed new mines (Desoto and Ona) on the Floridan Aquifer System. Modeling of the other two individual projects was not performed because those are extensions of existing mines; no new Floridan Aquifer water allocations are involved in their operations. Modeling of other alternatives' potential effects on the Floridan Aquifer was not performed, but effects are projected based on interpretation of the above evaluations.

EPA Recommendation: EPA Region 4 is currently reviewing the modeling efforts, and our Ground Water and Safe Drinking Water Enforcement Section will be providing technical input and assistance for the preparation of the FAEIS.

9. DAEIS Analysis of Discharge Monitoring History/Surface Water Quality

As part of the preparation of the DAEIS, a detailed review was appropriately conducted of historical mining discharge monitoring records in this area. These records indicated that surface water discharge from mines occurs but "not typically on a continuous basis." Surface water discharges from mines are intermittent, as mining companies maximize retention of rainfall for recirculation system use. Discharges generally occur when the system's capacity is exceeded, typically due to heavy rainfall and runoff. Mine discharge monitoring results "confirmed that selected parameters are elevated in mine discharges compared to ambient background levels" -- including elevated phosphorus, dissolved solids, conductivity, and sulfate. Additionally, a number of water body segments within the AEIS study area are included on the State's impaired waters list. However, when the selected outfalls, were averaged over the long term (five years), the discharges generally did not exceed relevant criteria levels, as summarized in DAEIS Table ES-12.

Biological monitoring downstream of active mine sites hasn't shown, "...a clear cause and effect relationships between mine discharges and biological responses..." EPA will continue our on-going assessment of the downstream effects of all mining activities even after the FAEIS is published. Evaluation of each downstream water body's compliance with the EPA-approved water quality standards is outlined in Florida's assessment methodology at Chapter 62-303, FAC. As required by the Clean Water Act (CWA), FDEP must report to EPA every two years regarding surface water body "use attainment" in its CWA 305(b) report and CWA 303(d) list of impaired waters. FDEP will identify to EPA any waterbodies which have a "water quality impairment" for the designated use. For each of the impaired waters, EPA will require that a Total Maximum Daily Load (TMDL) be developed for each particular pollutant that is not meeting the designated water quality standard. TMDL daily loads will be set as the pollutant limits for the water body, and will necessitate the creation of a "Basin Management Action Plans" (BMAPs) to lower any excessive pollutant loads and return the water body to a state of compliance with its designated use.

EPA Recommendation: EPA has promulgated, with future effective dates, numeric nutrient criteria for Florida's inland surface waters, and will propose numeric nutrient criteria for coastal waters in November of 2012. Site specific values in the surface water quality database indicate that these ranges may be exceeded at some sites. FDEP has also now adopted numeric nutrient criteria, including for marine waters such as Tampa Bay and Charlotte Harbor, and if approved by EPA, these will become the effective standards for CWA purposes for the waters to which they apply. The Final AEIS should be updated to reflect any future approvals of nutrient criteria.

10. DAEIS Economics Analysis

EPA's National Center for Environmental Economics (NCEE) conducted a thorough review of the economics analysis in the DAEIS and provided the following technical comments for consideration by the USACE. The NCEE reviewers note that the DAEIS examined the economic impacts from planned phosphate mining in the Central Florida area, and appropriately examined the predicted changes in economic activity in an 8 county region, including five counties in the CFPD and three adjacent counties. The NCEE reviewers also note that the DAEIS featured an analysis that reports changes in the value of output, labor income, and value added, as well as changes in employment, and utilizes the IMPLAN economic impact assessment software system for the majority of its calculations. EPA notes that the IMPLAN software "is currently used by hundreds of government agencies, colleges and universities, non-profit organizations, corporations, and business development and community planning organizations."

EPA Recommendations: Overall, the NCEE reviewers have suggested improvements for the FAEIS, including providing more documentation to support certain assumptions, better citation of sources, and consideration of the use of a higher discount rate. The reviewers noted that the discount rate has one of the largest impacts on the analysis, as a lower discount rate has the potential to inflate certain values. Additionally, the reviewers suggested that, in addition to the "with" and "without" mining alternatives, the FAEIS should consider scenarios which incorporate additional mitigation and conservation actions. Specific comments are as follows.

- The analysis uses a 2.0% discount rate as given as OMB Circular A-94, but this rate may not be appropriate for an analysis of phosphate mining. OMB's updated Circular A-4 recommends the use of both a 3% and 7% discount rate for benefit cost analysis. In order to appropriately calculate the net present value (NPV) of the economic impacts of phosphate mining, both 3% and 7%, presented alongside each other, is recommended.

- A 50-year time horizon was chosen for the analysis. More discussion should be included in the FAEIS on the use of a 50-year time horizon, particularly since there are clearly positive and negative economic impacts of these projects that carry beyond the 50-year time horizon. For instance, from years 41-50 there are still mining activities projected to be occurring in the Pioneer and Pine Levels/Key Extension mines. If reclamation is assumed to take 8 years (another assumption discussed below), then these activities will take place beyond the chosen horizon.

- The analysis calculates the projected property tax revenues to local governments. Instead of attempting to forecast these figures from available data, past data from the mining

- companies are used. The FAEIS should consider the inclusion of adjustments for future land uses, even though these projections play a large role in other parts of the DAEIS. The NCEE reviewers note that there is no temporal component to the property taxes (they are constant over all years), and these assumptions could significantly bias the projections.

- Even though the other areas of the DAEIS contain relatively detailed information on phosphate deposits at each mine, this analysis assumes an average value of 7.10 tonnes (metric tons) per acre for all mines. The FAEIS could easily be made more accurate for each mine based on existing information.

- Two assumptions in the DAEIS directly impact the results of the analysis and should be better supported by citations. First, the analysis assumes that reclamation is complete in 8 years, which should be better supported (for example, with peer reviewed literature). If not supported with peer reviewed literature, the analysis needs to use a better approach based on past data. The analysis also assumes that pasture is improved after reclamation. This also needs to be properly supported by data and citations.

We appreciate the opportunity to serve as a Cooperating Agency to USACE and to provide comments on this DAEIS. Based upon our review, EPA Region 4 has assigned this DAEIS a rating of EC-2, meaning we have requested additional information on several important areas, as explained above, including: 10-mile threshold of practicable pumping distance; permit durations; better wetlands impact avoidance and minimization strategies; compensatory mitigation; and improvements to some other areas of the document. Please include us in any notifications of future interagency meetings, and please forward a copy of the FAEIS when it becomes available. If you wish to discuss EPA's comments, please contact us at 404/562-9611 (mueller.heinz@epa.gov) or at 404/562-9330 (cox.williamL@epa.gov). Finally, as discussed previously, in accordance with our 404(q) process EPA will also be notifying the USACE by separate letter that the four mining projects may result in significant impacts to Aquatic Resources of National Importance (ARNIs).

Sincerely,

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